

CLAIMS

1. (Currently amended) An integrated circuit package comprising:

(a) an integrated circuit die having at least one integrated circuit and a first negative-inductance shunt element etched thereon, the integrated circuit comprising elements which require theoretically negative reactive component values; and

(b) ~~a housing containing said integrated circuit die, wherein said integrated circuit die is electrically coupled to said housing using at least one wire bond; and where the at least one wire bond has an inductance associated therewith, and comprises a series inductor of a series inverter portion of~~

an impedance inverter circuit including the first negative-inductance shunt element, the at least one wire bond, and a second negative-inductance shunt element coupled to the integrated circuit die through the at least one wire bond; and wherein the negative reactive component values theoretically required by the integrated circuit are actually incorporated into the integrated circuit through the use of the impedance inverter circuit.

2.- 42. (Cancelled)

43. (Currently amended) ~~The~~ An integrated circuit package of claim 42, further comprising: an integrated circuit die having at least one integrated circuit, the integrated circuit comprising elements that require theoretically negative reactive component values;

a housing containing said integrated circuit die, wherein said integrated circuit die is electrically coupled to said housing using at least one wire bond; and where the at least one wire bond has an inductance associated therewith, and comprises a series inductor of a series inverter portion of an impedance inverter circuit; and wherein the negative reactive component values theoretically required by the integrated circuit are incorporated into the integrated circuit through the use of the impedance inverter circuit;

a first inductor electrically coupled to the series inverter portion at a first node, wherein the first inductor is arranged in a shunt arrangement; and

a second inductor electrically coupled to the series inverter portion at a second node, wherein the second inductor is arranged in a shunt arrangement.

44. (Currently amended) The integrated circuit package of claim 43, wherein at least one of the said first and second inductors are formed external to said integrated circuit die.

45. (Currently amended) The integrated circuit package of claim 43, wherein one of said first and second inductors is formed external to said integrated circuit die and the other of said first and second inductors is formed integrally with said integrated circuit die.

46. (Currently amended) The integrated circuit package of claim 43, wherein each of said first and second inductors is formed integrally with said integrated circuit die.

47. (Currently amended) The integrated circuit package of claim 43, wherein each of said first and second inductors ~~from~~ include a spiral inductor.

48. (Currently amended) The integrated circuit package of claim 43, wherein said series inductor, said first and said second inductors ~~form an~~ are part of the impedance inverter, the impedance inverter adapted to transform a lower output impedance into a higher output impedance.

49. (New) The integrated circuit package of claim 43, wherein at least one of said first and second inductors has a negative inductance.

50. (New) The integrated circuit package of claim 43, wherein at least one of said first and second inductors are formed external to the housing.

51. (New) An integrated circuit package comprising:
an integrated circuit die having at least one integrated circuit, the integrated circuit comprising elements that require theoretically negative reactive component values;
a housing containing said integrated circuit die, wherein said integrated circuit die is electrically coupled to said housing using at least one wire bond; and where the at least one wire bond has an inductance associated therewith; and

means for incorporating the negative reactive component values into the integrated circuit, the means for incorporating the negative reactive component values including:

a series inverter portion including the at least one wire bond as a series inductor;

a first inductor electrically coupled to the series inverter portion at a first node, wherein the first inductor is arranged in a shunt arrangement; and

a second inductor electrically coupled to the series inverter portion at a second node, wherein the second inductor is arranged in a shunt arrangement.

52. (New) The integrated circuit package of claim 51, wherein at least one of said first and second inductors are formed external to said integrated circuit die.

53. (New) The integrated circuit package of claim 51, wherein one of said first and second inductors is formed external to said integrated circuit die and the other of said first and second inductors is formed integrally with said integrated circuit die.

54. (New) The integrated circuit package of claim 51, wherein each of said first and second inductors is formed integrally with said integrated circuit die.

55. (New) The integrated circuit package of claim 51, wherein each of said first and second inductors include a spiral inductor.

56. (New) The integrated circuit package of claim 51, wherein the means for incorporating the negative reactive component values into the integrated circuit is adapted to transform a lower output impedance into a higher output impedance.

57. (New) The integrated circuit package of claim 51, wherein at least one of said first and second inductors has a negative inductance.

58. (New) The integrated circuit package of claim 51, wherein at least one of said first and second inductors are formed external to the housing.

59. (New) The integrated circuit of claim 1, wherein at least one of the first negative-inductance shunt element and the second negative-inductance shunt element has a negative inductance only over a limited bandwidth.

60. (New) The integrated circuit of claim 59, wherein at least one of the first negative-inductance shunt element and the second negative-inductance shunt element having the negative inductance only over the limited bandwidth includes a capacitor configured to have the negative inductance only over the limited bandwidth.

61. (New) The integrated circuit of claim 1, wherein the second negative-inductance shunt element is external to the housing.